By these arrangements effective instruction in the museum is provided for 900 to 1000 children per week. This work was undertaken in response to the appeal of the Education Committee, and in one sense at least it may be regarded as war emergency work. Its real value and usefulness have already been appreciated by the education authorities and by the teachers. But if the museum should be closed down, how can the work go on? What is to be done with the children? They have already been deprived of their schools by the military authorities. It is very desirable that they should not now be denied the valuable alternative instruction provided for them. The same problem will probably arise in many of the provincial towns in the country where similar work is being done.

W. M. TATTERSALL.

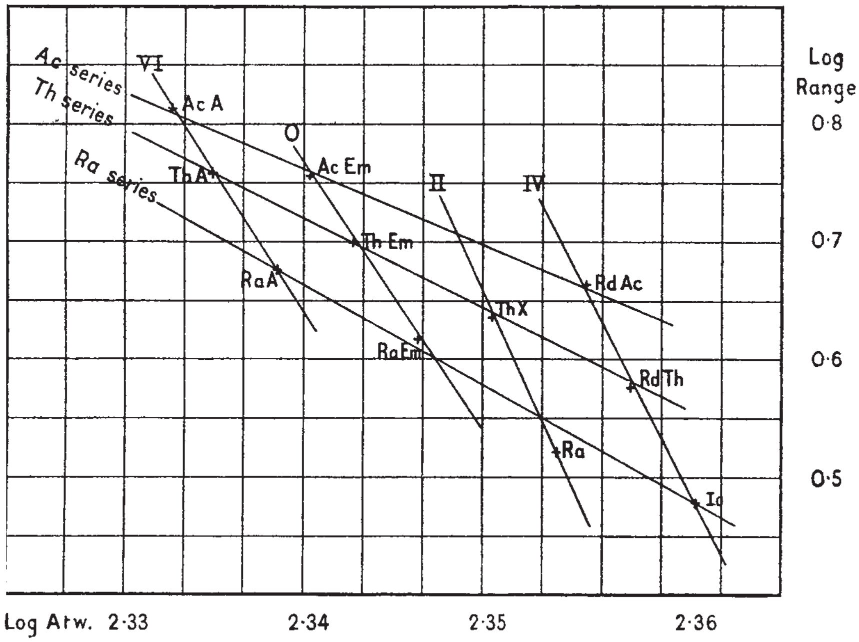
The Manchester Museum.

A Relation between Atomic Weights and Radio-active Constants.

THE interesting relation given by Mr. F. Gilbert Carruthers in NATURE of January 20, p. 565, holds, for corresponding isotopes, nearly exactly, if, as suggested by Fajans, the atomic weight of actinium should be 227 instead of 226. From IV. to VI.B the only exception is AcX (and perhaps Ra). But the lines are not parallel, and not equally spaced.

A. VAN DEN BROEK.

Gorsel, Holland, January 25.



Asteroids Feeding upon Living Sea-Anemones.

As bearing upon the observations recorded by Mr. H. N. Milligan in NATURE of February 3, I should like to say that two of ten specimens of *Eupargurus prideauxii,* which have been kept in the aquarium of this institution since last autumn, died on January 23. The molluscan shell occupied by one of these specimens was that of *Trochus magus,* that occupied by the other was of *Scaphander lignarius.* Both shells were, as usual, enveloped by a specimen of the anemone *Adamsia palliata.* When I first noticed the dead hermit-crabs both lay on the gravel at the bottom of the tank with their ventral surfaces uppermost, and in both cases the abdomen was partially withdrawn from the molluscan shell. Both had been attacked and partially enveloped, one by two half-grown specimens of the asteroid *Porania pulvillus,* and the other by one rather larger specimen.

As I have for some time been interested in the feeding habits of Porania and Solaster, I wished to see what would happen and did not disturb the specimens until the following morning. I then found that no appreciable impression had been made by the starfishes upon the soft abdomens of the hermit-crabs; but I was much interested to find that in both cases the enveloping anemone had discharged a considerable number of acontia, with which the actinal surfaces of the starfishes, and probably their partially everted stomachs, had been in contact.

My observations of the feeding habits of Porania have extended over two years, and I have invariably found it an exceedingly slow feeder. As shown by Gemmill (Proc. Zool. Soc., March, 1915, p. 13), this species is capable of subsisting for long periods upon microscopic food particles swept into the digestive tract by ciliary currents. My own observations tend to confirm those of Gemmill; and in view of such a capacity it appears to me to be remarkable that a voluntary attack should have been made upon so large a morsel as the abdomen of a Eupagurus, especially when protected, as is commonly assumed, by an actinian. The anemones did not show any outward sign of injury beyond partial relaxation of their hold upon the molluscan shells.

H. C. CHADWICK.

The Biological Station,
Port Erin.

Colourless Crystals of Hæmoglobin.

CRYSTALS of hæmatoidin in old blood extravasations in tissues are not—or at any rate have not been in the cases I have examined—soluble in chloroform or other solvents of bilirubin either with or without acidification. The colour dissolves out readily enough, but a transparent shape remains in the form of the original crystal. I have assumed that this remnant is a proteid basis similar to those which are well known in the crystals of urinary deposits and in calculi, and it is possible that Prof. Fraser Harris's curious experiences with hæmoglobin crystals are explicable along these lines. It is at least likely that hæmoglobin crystals prepared in the ordinary way contain also some serum proteid.

A. E. BOYCOTT.

17 Loom Lane, Radlett, February 4.

Tubular Rock Structures.

THE council of the Geophysics Society desires to obtain records of mineral growths taking the form of hollow cylinders—those not due to organisms, and

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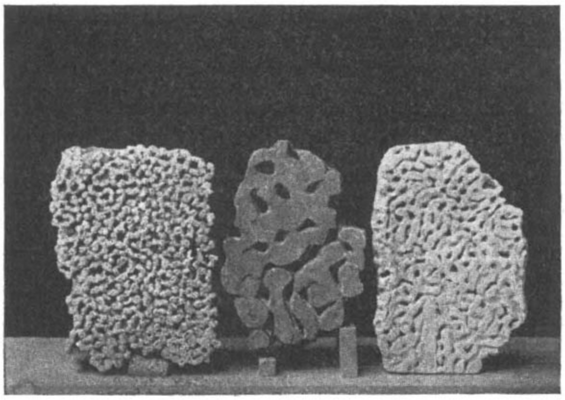
consisting of either lime, silica, iron, or other elements. Any such information from your readers would be valued.

The Magnesian Limestone of Sunderland has perhaps the largest number of these calcareous growths, of which this illustration shows three specimens. The first and third show clearly the change from rods to tubes, the last being the most advanced and typical as to size. That in the centre is extra large, but the process is incomplete.



Tubular structures in magnesium limestone. ×⅓.

Other illustrations of the structures in the Fulwell Hill beds can be seen in NATURE of January 29 and December 31, 1914. GEORGE ABBOTT.

2 Rusthall Park, Tunbridge Wells, February 3.

WILD AMAZONIA.

THE author, whilst fretting on the Active List owing to ill-health contracted in the interior of East Africa, happened to read Wallace's classical "Travels on the Amazon," with the result that he left England in the month of April, 1908, reaching Manaos by the end of May. His serious work began in the middle of August at Encanto, the place of "enchantment," now by irony of fate of Putumayo fame. Thence he disappeared for some months in the wilderness, roaming over some 40,000 square miles of that no man's land claimed by Brazil, Ecuador, and Peru. His company was composed as follows:—Above all, John Brown, a Barbados negro, as personal servant, who proved himself a very good choice; eight Indian carriers who were changed often, mostly because they ran away; two half-castes, rubber-collectors who attached themselves to the party for some time; and eight Rationales or semi-civilised Indians, with three women, and armed with Winchesters. It is customary, in most Latin-American countries, to distinguish as "reasonables" those Indians who have been broken in to the white man's ways; other tribes are *bravos*, *reduzidos*, and *manzos*, *i.e.*, still wild, broken, or tame.

The danger of these travels arises from the wild natives, who, not understanding the object of a white man's presence, think it best to kill him, provided there is a chance of doing so without danger to themselves. An attempt to clear up the fate of the French explorer Robuchon, lost in 1906, was unsuccessful. When possible, travelling was done by launch; that down and up the Japura river by canoe; but by far the greater part of the journeys was across country, and therefore the most difficult in every respect.

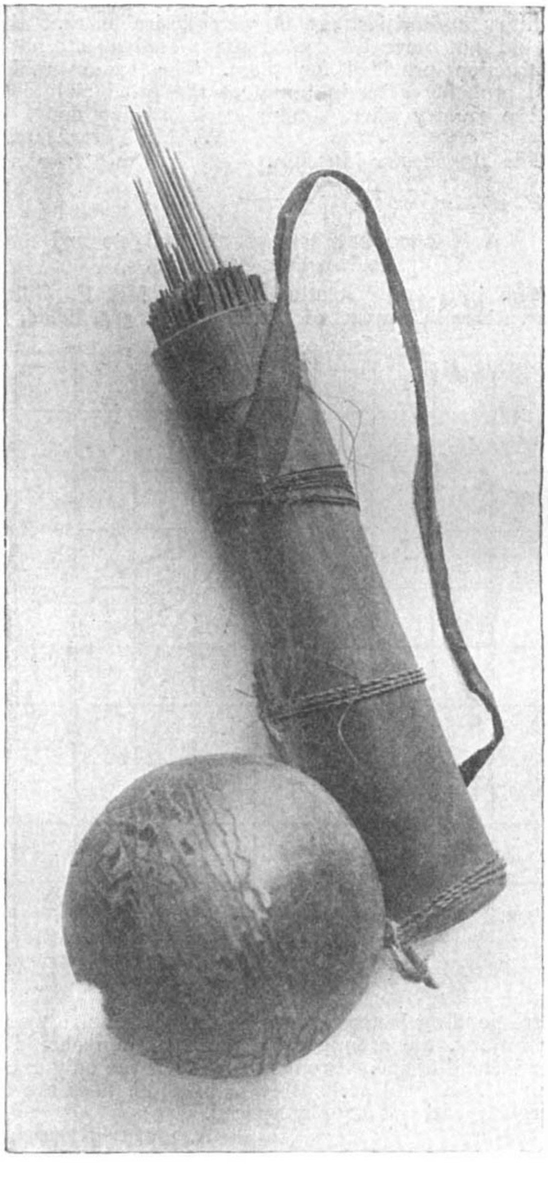


FIG. 1.—Andoke bamboo case with darts for blowpipe and gourd full of cotton. From "The North-West Amazons."

The seven months' travelling make an extremely complicated course.

Experienced traveller as he was, Captain Whiffen, in order to get an insight into the Indians' mode of life, sank all notions of superiority, manners, and customs, and practically lived their kind of life. Information could be obtained only by closest observation. The language is always the difficulty, and yet slurred over

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[1] "The North-West Amazons. Notes of Some Months Spent among Cannibal Tribes." By Capt. T. Whiffen. Pp. xvii+319. (London: Constable and Co., Ltd., 1915) Price 12*s*. 6*d*. net.

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